

Appl. No. 10/729,925

500.43322X00

Supplemental Amendment dated January 17, 2006

Additional Reply to Office Action of August 22, 2005

Amendments to the Claims:

This listing of claims will replace all prior versions and listing of claims in the application.

Listing of Claims:

1-9. (Canceled)

10. (Previously Presented) A disk array system, comprising:

- a port receiving data from an information processing device;
- a first controller transferring data received by said port;
- a memory storing data in accordance with the transferring performed by said first controller;
- a second controller transferring data stored in said memory;
- a plurality of disk drive groups to which data transferred by said second controller is stored and having a plurality of storage regions in a plurality of disk drives;
- a plurality of logical units being addresses to which data is sent from said information processing device and corresponding to said storage regions; and
- a plurality of resource groups each having a first plural kinds of resources among said ports, said first controller, said memory, said second controller, said disk drive groups, and said logical units,

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wherein, in order to change configuration in a first resource group of said resource groups, a first resource in said first resource group is permitted to change from a first state of relating to a second resource in said first resource group into a second state of relating to a third resource in said first resource group without being permitted to change to a third state of relating to a fourth resource in a second resource group of said resource groups.

11. (Previously Presented) The disk array system according to claim 10, further comprising:

a plurality of information processing device groups sending data to said ports and having said information processing device,

wherein each of said resource groups has a second plural kinds of resources among said ports, said information processing device groups, said first controller, said memory, said second controller, said disk drive groups, and said logical units.

12. (Previously Presented) The disk array system according to claim 10, further comprising:

a plurality of physical resources having said ports, said first controller, said memory, said second controller, and said disk drive groups; and

a plurality of logical resources having said logical units;

wherein said first resource is one of said physical resources, and

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wherein said second resource and said third resource are each one of said logical resources.

13. (Previously Presented) The disk array system according to claim 10, wherein, in order to change configuration in said second resource group, said fourth resource is changed from a fourth state of relating to a fifth resource in said second resource group into a fifth state of relating to a sixth resource in said second resource group without being permitted to change to a sixth state of relating to said first resource in said first resource group, and

wherein one or more resources in said first resource group are a different kind than all of the resources in said second resource group.

14. (Previously Presented) The disk array system according to claim 10, wherein, in order to change configuration in said second resource group, said fourth resource is changed from a fourth state of relating to a fifth resource in said second resource group into a fifth state of relating to a sixth resource in said second resource group; and

wherein a seventh resource among said ports, said first controller, said memory, said second controller, said disk drive groups, and said logical units does not belong to either of said first resource group and said second resource group.

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15. (Previously Presented) The disk array system according to claim 10,
wherein:

said information processing device displays information of some resources in
said first resource group and requests to change said first state into said second
state.

16. (Previously Presented) The disk array system according to claim 10,
further comprising:

a managing device having information relating to said resource groups; and
a management client coupled to said managing device and displaying
information of some resources in said first resource group and requesting to change
said first state into said second state.

17. (Previously Presented) The disk array system according to claim 10,
wherein:

said first resource and said second resource are used to transfer data sent
from said information processing device to a first storage region of said storage
regions in said first resource group; and

said first resource and said third resource are used to transfer data sent from
said information processing device to said first storage region or a second storage
region of said storage regions in said first resource group.

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18. (Previously Presented) The disk array system according to claim 10, further comprising:

a plurality of information processing devices sending data to said ports, said information processing device being one of said plurality of information processing devices;

wherein one of said information processing devices is permitted to access data in a first storage region of said storage regions in said first resource group and is not permitted to access data in a second storage region of said storage regions in said first resource group, and

wherein another of said information processing devices is permitted to access data in said second storage region of said storage regions in said first resource group and not permitted to access data in said first storage region of said storage regions in said first resource group.

19. (Currently Amended) A disk array system, comprising:
a port receiving data from an information processing device;
a logical unit provided for said information processing device and relating to a storage region;

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a RAID (Redundant Array of Independent Disks) group relating to a plurality of disk drives, said disk drives storing a plurality of data and a parity data related to data sent from said information processing device and including said storage region;

a plurality of logical resources having said port, said logical unit and said RAID group;

a plurality of physical resources including said disk drives;

a plurality of resource groups each having one or more said logical resources and one or more said physical resources; and

wherein, in order to change configuration in a first resource group of said resource groups, said first resource is permitted to change from a first state of relating between said first resource and a second resource in said first resource group into a second state of relating between said first resource and a third resource in said first resource group without being permitted to change to a third state of relating to a fourth resource in a second resource group of said resource groups.

20. (Currently Amended) A disk array system, comprising:

a plurality of ports each receiving data from an information processing device;

a plurality of logical units provided for said information processing device and relating to a plurality of storage regions;

a plurality of disk drives having said storage regions;

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a plurality of ECC (Error Check and Correct) groups relating to said disk drives and each of said ECC groups storing a plurality of data and a parity data related to data sent from said information processing device;

a first plurality of resources having said ports, said logical units, said disk drives and said ECC groups;

a second plurality of resources having plural types of resources in said first plurality of resources; and

a plurality of resource groups each having said second plurality of resources;

wherein, in order to change configuration in one of said resource groups, said one of said resource groups can be permitted to change a relationship between said second plurality of resources in said one of said resource groups and can not be permitted to change a relationship between one of said second plurality of resources in said one of said resource groups and another of said second plurality of resources in another resource group of said resource groups, each of said resource groups, independently of each other, is permitted to change a relationship between said second plurality of resources in each of said resource groups.

21. (Currently Amended) A disk array system, comprising:

a port receiving data sent from an information processing device;

a logical unit provided for said information processing device to store data and relating to a storage region;

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a logical unit provided for said information processing device to store data and relating to a storage region;

a plurality of disk drives having said storage region;

a RAID (Redundant Array of Independent Disks) group relating to said disk drives, said disk drives storing a plurality of data and a parity data related to data sent from said information processing device; and

a plurality of resource groups each having plural types of resources among said port, said logical unit, said disk drives and said RAID group and each of said resource groups being logically partitioned by logical partitions;

wherein, in order to change configuration in one of said resource groups, said one of said resource groups is permitted to change a relationship between said plural types of resources in said one of said resource groups and is not permitted to change a relationship between one resource in said one of said resource groups and another resource in another resource group of said resource groups.
~~each of said resource groups, independently of each other, is permitted to change a relationship between said plural types of resources in said each of said resource groups.~~

22. (Currently Amended). A disk array system, comprising:

a port receiving data sent from an information processing device;

a first controller transferring data received by said port;

a memory storing data in accordance with controlling by said first controller;

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a second controller transferring data stored in said memory;

a disk drive group storing data transferred by said second controller and
having a plurality of disk drives;

a logical unit number being an address to which data is sent from said
information processing device and corresponding to a storage region in said disk
drive group;

a plurality of resource groups each having said port, a part or all of said first
controller, a part or all of said memory, a part or all of said second controller, said
disk drive group, and said logical unit number; and

wherein, in order to change configuration in said ~~a~~ first resource group of said
resource groups, a first resource in said first resource group ~~is~~ is permitted to change
from a first state of relating to a second resource in said first resource group into a
second state of relating to a third resource in said first resource group and ~~being is~~
not permitted to change from said first state into a third state of relating to a fourth
resource in a second resource group of said resource groups.

23. (Previously Presented) A disk array system, comprising:

a port receiving data sent from an information processing device;

a logical unit number provided for said information processing device and
relating to said port;

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a RAID (Redundant Array of Independent Disks) group relating to a plurality of disk drives, said disk drives storing a plurality of data and a parity data related to data sent from said information processing device to said port;

a plurality of logical resources having said port, said logical unit number and said RAID group;

a plurality of physical resources having said disk drives;

a plurality of resource groups each having one or more of said logical resources and one or more of said physical resources;

wherein, in response to a request for changing configuration in a first resource group of said resource groups, a first resource in said first resource group can be permitted to change from a first state of relating between said first resource and a second resource in said first resource group into a second state of relating between said first resource and a third resource in said first resource group and can be not permitted to change said first state into a third state of relating between said first resource and a fourth resource in a second resource group of said second resource groups.

24. (Currently Amended) ~~A-The disk array system, comprising according to claim 21:~~

~~— a port receiving data from an information processing device;~~

~~— a controller transferring data received by said port;~~

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~~_____ a memory storing information which is used to control;~~

~~_____ a plurality of disk drives storing data transferred and having a plurality of storage regions; and~~

~~_____ a plurality of resource groups each being mutually partitioned by a logical partition and each having a plurality of said ports, a part of logical parts corresponding to said controller, a part of logical parts corresponding to said memory, and said disk drives;~~

~~_____ wherein each of said resource groups can be related to one or more of said information processing devices;~~

wherein a first information processing device related to a first resource groupsaid one of said resource groups can access resources in said firstone of said resource groups and cannot access resources in a secondsaid another resource group of said resource groups.

25. (Currently Amended) A The disk array system, comprising according to claim 23,:

~~_____ a port receiving data from an information processing device;~~

~~_____ a controller transferring data received by said port;~~

~~_____ a memory storing data received by said port;~~

~~_____ a plurality of disk drives storing data transferred and having a plurality of storage regions; and~~

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~~_____ a plurality of resource groups each being mutually partitioned by a logical partition and each having a plurality of said ports, a part of logical parts corresponding to said controller, a part of logical parts corresponding to said memory, and said disk drives;~~

~~_____ wherein each of said resource groups can be related to one or more of said information processing devices,~~

wherein a first information processing device related to a said first resource group ~~of said resource groups~~ can be permitted to access resources in said first resource group and can be not permitted to access resources in a said second resource group ~~of said resource groups~~.